



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Memorandum

Subject: **INFORMATION:** Engineering Brief No. 65,  
Minimum Requirements to Widen Existing  
150-Foot Wide Runways for Airbus A380  
Operations

Date: February 13, 2004

From: Manager, Airport Engineering Division, AAS-100

Reply to  
Attn. of:

To: All Regions  
Attn: Manager, Airports Division

Engineering Brief No. 65, "Minimum Requirements to Widen Existing 150-Foot Wide Runways for Airbus A380 Operations" is attached. In general, the specific conditions cover a permissible alternative to temporarily widen an existing 150-foot wide runway to accommodate limited operations by A380 aircraft.

As this Engineering Brief addresses modifications to standards particular to New Large Aircraft, approval authority remains with this office.

SIGNED BY

Rick Marinelli, P.E.

Attachment

**Engineering Brief No. 65**  
**Minimum Requirements to Widen**  
**Existing 150-Foot Wide Runways for Airbus A380 Operations**

**February 2004**

**A. BACKGROUND**

Within the next few years, we expect several U.S. airports to receive service by Airbus A380 aircraft, starting with a passenger version in late 2005 and followed by a freighter derivative in 2008. The airplane, categorized as a Design Group (DG) VI airplane, is the largest commercial airplane expected to serve the United States.

In Advisory Circular 150/5300-13, *Airport Design*, we recommend a runway width of 200 feet for DG VI aircraft. Most existing runways at affected airports, however, were built to DG V standards, with a recommended runway width of 150 feet. Airbus Industries believes that FAA will conclude that the airplane can operate on 150-footwide runways. As we cannot be sure of the operating characteristics of an aircraft that has not yet flown, it would be inappropriate at this time for us to recommend operations of the A380 airplane on a 150-foot wide runway.

In the interim, recognizing that airport authorities need to plan, the Airport Engineering Division, conducted an analysis that focused on converting existing shoulder pavement to useable runway pavement. For full performance, it is necessary to reinforce 25 feet of shoulder pavement to at least 70 percent of the runway's full-pavement thickness as prescribed in AC 150/5320-6D, *Airport Pavement Design and Evaluation*, paragraph 307. Runway shoulders must also meet DG-VI standards.

**B. PURPOSE**

This engineering brief is issued to provide criteria for approval of modifications to standards for minimum pavement sections for A380 operations on 200-foot wide runways where the outer sections are not reinforced to at least 70 percent of the runway's full-pavement thickness.

This guidance applies to existing runways only. New pavement construction should comply with AC 150/5320-6D requirements. We anticipate that the minimum pavement section will not be used for a period exceeding five years.

**C. SPECIFIC CONDITION**

Approval of modifications to standards to convert shoulder pavement on an existing 150-foot wide runway to useable runway pavement for use by A380 aircraft will be subject to the conditions detailed below.

- 1. Minimum Number of Coverages.** Proposed pavements must be designed to allow a minimum of 240 coverages of the A380. Please note that coverages are not the same as annual departures (see AC 150/5320-6D for an explanation of coverages).
- 2. Minimum Pavement Layer Thicknesses.** Proposed pavement sections must have at least 5 inches of asphalt surfacing over existing aggregate base and/or subbase materials. It is preferable to asphalt surfacing materials that meet the requirements of Item P-401; however, a high quality state highway department standard mixture with a 3/4" maximum size aggregate is also acceptable.
- 3. Grading, Marking, Lighting, and Overall Width.** All existing and converted pavement surfaces are to be graded in accordance with the runway grading standards prescribed in AC 150/5300-13. Furthermore, existing runway edge markings and lighting must be relocated to the new edges of the runway. Lastly, the existing shoulders must be expanded to provide an overall width (runway plus shoulders) of 280 feet.
- 4. Precautionary Inspection.** The minimum pavement section should provide adequate strength to prevent failure of the pavement with any single coverage. As a precaution, this area of the runway pavement surface should be inspected and repair anticipated after any aircraft movement.

Signed by

Rick Marinelli, P.E.  
Manager, Airport Engineering Division, AAS-100